IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An antifuse structure in an integrated circuit, comprising:
~~first~~ first, second and third conductive members; and
means for moving at least a portion of the second conductive member as a solid unit relative the first and third conductive members.

2. (Original) The antifuse structure of claim 1, wherein the means for moving the second conductive member comprises a material composition including a gas in solid solution.

3. (Original) The antifuse structure of claim 1, wherein the means for moving the second conductive member comprises a material composition including hydrogen in solid solution or in a hydride phase.

4. (Original) The antifuse structure of claim 1, wherein the means for moving the second conductive member comprises at least one of titanium, hafnium, niobium, tantalum, thorium, vanadium, and zirconium, and hydrogen in solid solution or in a hydride phase.

5. (Original) The antifuse structure of claim 1, wherein the means for moving the second conductive member comprises a thin-film resistor and a layer comprising at least one of the following compounds: Pb_3O_4, PbO_2, HgO, Ag_2O, MnO_2, Ag_2O, K_3N, Rb_3N, $ReN_{0.43}$, Co_3N, Ni_3N, or Cd_3N_2.

6. (Currenty Amended) An antifuse structure in an integrated circuit, comprising:
first and second noncontacting conductive members; and
a layer comprising hydrogen in solid solution or a hydride phase adjacent to one of the first and second noncontacting conductive members<u>, wherein the layer comprises an amount of hydrogen sufficient upon release to move the one of the first and second noncontacting conductive members</u>.

7. (Previously Presented) The antifuse structure of claim 6, wherein the layer comprises titanium hydride.

8. (Original) The antifuse structure of claim 6, wherein the layer comprises at lease one of titanium, hafnium, niobium, tantalum, thorium, vanadium, and zirconium, and hydrogen in solid solution or in a hydride phase.

9. (Original) The antifuse structure of claim 6, wherein the first noncontacting conductive member lies at least partly between the layer comprising the gas in solid solution or hydride phase and the second noncontacting conductive member.

10. (Original) An antifuse structure in an integrated circuit, comprising:
first and second noncontacting conductive members; and
a layer comprising a gas in solid solution or hydride phase for moving the second conductive member relative the first conductive member.

11. (Original) The antifuse structure of claim 10, wherein the layer comprises a material composition including hydrogen in solid solution or in a hydride phase.

12 (Original) The antifuse structure of claim 10, wherein the layer comprises at least one of titanium, hafnium, niobium, tantalum, thorium, vanadium, and zirconium, and hydrogen in solid solution or in a hydride phase.

13. (Original) The antifuse structure of claim 10, wherein the first noncontacting conductive member lies at least partly between the layer comprising the gas in solid solution or hydride phase and the second noncontacting conductive member.

14. (Previously Presented) An antifuse structure in an integrated circuit, comprising:
first, second, and third noncontacting conductive members; and
a layer adjacent the second conductive member and comprising at least one of titanium, hafnium, niobium, tantalum, thorium, vanadium, and zirconium, and hydrogen in solid solution or in a hydride phase.

15. (Previously Presented) An antifuse structure in an integrated circuit, comprising;
first, second, and third noncontacting conductive members; and
a layer adjacent to the second conductive member and comprising at least one of a metal hydride, Pb_3O_4, PbO_2, HgO, Ag_2O, MnO_2, Ag_2O, K_3N, Rb_3N, $ReN_{0.43}$, Co_3N, Ni_3N, or Cd_3N_2 or a compound which can be charged with hydrogen, oxygen or nitrogen to yield one of these compounds.

16. (Previously Presented) An antifuse structure in an integrated circuit, comprising:
first, second, and third noncontacting conductive members; and
a layer adjacent to the second noncontacting conductive members for moving the second conductive member into contact with the first conductive member, the layer comprising at least one of titanium, hafnium, niobium, tantalum, thorium, vanadium, and zirconium, and hydrogen in solid solution or in a hydride phase.

17. (Previously Presented) An antifuse structure in an integrated circuit, comprising:
a chamber having a bottom and a top and two or more opposing interior-wall portions extending between the top and bottom;
a high-gas-saturatable layer at least partially within the chamber; and

a conductive, low-gas-saturatable layer between the high-gas-saturatable layer and the top of the chamber and contacting at least two of the opposing interior-wall portions.

18. (Original) The antifuse structure of claim 17 wherein the high-gas-saturatable layer has a hydrogen-gas-solubility at least 10 times greater than that of the conductive, low-gas-saturatable layer.

19. (Previously Presented) The antifuse structure of claim 17, wherein the chamber comprises:
a semiconductive substrate; and
an insulative layer on the substrate and having an opening exposing a portion of the substrate, with the exposed portion of the substrate defining at least a portion of the bottom of the chamber and the opening defining the interior sidewalls of the chamber.

20. (Previously Presented) An antifuse structure in an integrated circuit, comprising:
an insulative chamber having a bottom and a top and one or more interior walls extending between the top and bottom;
a high-gas-saturatable layer at least partially within the chamber;
a conductive, low-gas-saturatable layer between the high-gas-saturatable layer and the top of the chamber; and
first and second conductive members overhanging the top of the chamber.

21. (Original) The antifuse structure of claim 20 wherein the high-gas-saturatable layer has a hydrogen-gas-solubility at least five times greater than that of the conductive, low-gas-saturatable layer.

22. (Original) The antifuse structure of claim 20, wherein the high-gas-saturatable layer comprises at least one of titanium, hafnium, niobium, tantalum, thorium, vanadium, and zirconium.

23. (Original) The antifuse structure of claim 20 wherein the chamber comprises:
a substrate; and
an insulative layer on the substrate and having an opening exposing a portion of the substrate, with the exposed portion of the substrate defining at least a portion of the bottom of the chamber and the opening defining the interior sidewalls of the chamber.

24. (Original) An antifuse structure in an integrated circuit, comprising:
a chamber having a bottom and a top and one or more interior walls extending between the top and bottom;
a conductive layer within the chamber;
a layer within the chamber between the conductive layer and the bottom of the chamber, and comprising a material having a hydrogen-gas-solubility at least 10 times greater than that of at least a portion of the conductive layer; and
first and second conductive members overhanging the top of the chamber.

25. (Original) The antifuse structure of claim 24 wherein the chamber comprises:
a substrate; and
an insulative layer on the substrate and having an opening exposing a portion of the substrate, with the exposed portion of the substrate defining at least a portion of the bottom of the chamber and the opening defining the interior sidewalls of the chamber.

26. (Original) The antifuse structure of claim 24 wherein the first and second conductive members overhang the chamber by at least 250 angstroms.

27. (Original) The antifuse structure of claim 24, wherein the layer comprises at least one of titanium, hafnium, niobium, tantalum, thorium, vanadium, and zirconium, and hydrogen in solid solution or hydride phases.

28. (Original) The antifuse structure of claim 24, wherein the layer within the chamber comprises Pb_3O_4, PbO_2, HgO, Ag_2O, MnO_2, Ag_2O, K_3N, Rb_3N, $ReN_{0.43}$, Co_3N, Ni_3N, or Cd_3N_2.

29. (Original) The antifuse structure of claim 24, wherein the conductive layer comprises at least one of aluminum, copper, silver, and gold.

30. (Previously Presented) An antifuse structure in an integrated circuit, comprising:

an insulative chamber having a bottom and a top and one or more interior walls extending between the top and bottom;

a conductive layer within the chamber and comprising at least one of aluminum, copper, silver, and gold;

a layer lying within the chamber between the conductive layer and the bottom of the chamber, and comprising at least one of titanium, hafnium, niobium, tantalum, thorium, vanadium, and zirconium, and hydrogen in solid solution or in one or more hydride phases or at least one of Pb_3O_4, PbO_2, HgO, Ag_2O, MnO_2, Ag_2O, K_3N, Rb_3N, $ReN_{0.43}$, Co_3N, Ni_3N, or Cd_3N_2; and

first and second conductive members each overhanging the top of the chamber by at least 250 angstroms.

31. (Previously Presented) The antifuse structure of claim 30 wherein the chamber comprises:

a semiconductive substrate; and

an insulative layer on the substrate and having an opening exposing a portion of the substrate, with the exposed portion of the substrate defining at least a portion of

the bottom of the chamber and the opening defining the interior sidewalls of the chamber.

32. (Currently Amended) An antifuse structure in an integrated circuit, comprising:
an insulative chamber having a bottom and a top and two or more opposing interior-wall portions extending between the top and bottom;
a conductive layer within the chamber, contacting at least two of the opposing interior-wall portions, and comprising at least one of aluminum, copper, silver, and gold; and
first and second conductive members each overhanging the top of the chamber by at least 250 angstroms <u>and each electrically decoupled from the conductive layer</u>.

33. (Original) The antifuse structure of claim 32 wherein the chamber comprises:
a substrate; and
an insulative layer on the substrate and having an opening exposing a portion of the substrate, with the exposed portion of the substrate defining at least a portion of the bottom of the chamber and the opening defining the interior sidewalls of the chamber.

34. (Currently Amended) An antifuse structure in an integrated circuit, comprising:
a chamber having a bottom and a ~~tope~~ <u>top</u> and one or more interior walls extending between the top and bottom;
a conductive layer within the chamber and comprising at least one of aluminum, copper, silver, and gold; and
first and second conductive members each overhanging the top of the chamber by at least 250 angstroms and contacting the conductive layer within the chamber.

35. (Original) The antifuse structure of claim 34 wherein the first and second conductive members are fused to the conductive layer.

36. (Previously Presented) A structure for a programmable electrical connection in an integrated circuit, comprising:

a chamber having a bottom, a top, and two or more opposing interior-wall portions extending between the top and bottom;

a conductive layer within the chamber and contacting at least two of the opposing interior-wall portions; and

one or more conductive members, each overhanging the top of the chamber.

37. (Previously Presented) A programmable electrical connection comprising:

a layer having a cavity;

first and second conductive members having respective first and second ends overhanging the cavity;

a third conductive member in the cavity spaced from the first and second ends; and

means for displacing the third conductive member toward the first and second ends and electrically connecting the first and second conductive members.

38. (Original) The programmable electrical connection of claim 37 wherein the means for displacing the third conductive member toward the first and second ends includes a layer comprising a gas in solid solution or in a hydride phase or a layer comprising at least one of the following compounds: Pb_3O_4, PbO_2, HgO, Ag_2O, MnO_2, Ag_2O, K_3N, Rb_3N, $ReN_{0.43}$, Co_3N, Ni_3N, or Cd_3N_2.

39. (Previously Presented) A structure for a programmable electrical connection in an integrated circuit, comprising:

first and second conductive members; and

means for moving the second conductive member as a solid unit relative the first conductive member.

40. (Previously Presented) An integrated circuit comprising:
one or more transistors; and
one or more programmable electrical connections integral to the circuit and coupled to each of the one or more transistors, with each programmable electrical connection comprising:
at least a first and a second conductive member; and
means for moving the second conductive member as a solid unit relative the first conductive member.

41. (Original) The integrated circuit of claim 40, wherein the means for moving the second conductive member relative the first conductive member moves the second conductive member toward the first conductive member.

42. (Previously Presented) An integrated circuit comprising:
one or more transistors; and
one or more programmable electrical connections, with each coupled to at least one of the one or more transistors and comprising:
at least a first and a second conductive member; and
means for moving at least a portion of the second conductive member as a solid unit relative the first conductive member.

43. (Previously Presented) The integrated circuit of claim 42, wherein the means for moving the second conductive member as a solid unit relative the first conductive member moves the second conductive member toward the first conductive member.

44. (Previously Presented) A programmable logic array comprising:
one or more transistors; and
one or more programmable electrical connections coupled to each of the one or more transistors, with each programmable electrical connection comprising:
first and second conductive members; and

means for moving at least a portion of the second conductive member as a solid unit relative the first conductive member.

45. (Original) The integrated circuit of claim 44, wherein the means for moving the second conductive member relative the first conductive member moves the second conductive member toward the first conductive member.

46. (Previously Presented) An integrated memory circuit comprising:
one or more memory cells;
one or more redundant memory cells; and
one or more programmable electrical connections coupled to each of the one or more redundant memory cells, with each programmable electrical connection comprising:
first and second conductive members; and
means for moving the second conductive member as a solid unit relative the first conductive member.

47. (Previously Presented) A system comprising:
a processor; and
an integrated circuit, with the integrated circuit including one or more programmable electrical connections coupled to each of the one or more redundant memory cells, with each programmable electrical connection comprising:
first and second conductive members; and
means for moving at least a portion of the second conductive member as a solid unit relative the first conductive member.

48-60. (Cancelled)

61. (Previously Presented) A method of operating an antifuse in an integrated circuit, the method comprising:
saturating a portion of the antifuse with a gas; and
releasing gas from the saturated portion of the antifuse to program the antifuse.

62. (Cancelled)

63. (Previously Presented) A method of operating an antifuse in an integrated circuit, the method comprising:
saturating a first member of the antifuse with a gas; and
releasing gas from the first member; and
in response to releasing gas from the first member, moving a second member into contact with a third member.

64. (Original) The method of claim 63, wherein releasing gas from the first member comprises heating at least the first member.

65. (Cancelled)

66. (Previously Presented) A method of operating one or more antifuses in an integrated circuit, with each antifuse having a normally open electrical connection, the method comprising:
saturating a portion of one or more of the antifuses with a gas;
releasing gas from the saturated portions of one or more of the antifuses; and
in response to releasing gas from the saturated portions of the one or more of the antifuses, closing the normally open electrical connection of the one or more of the antifuses.

67. (Previously Presented) The method of claim 66, wherein saturating a portion of one or more of the antifuses with a gas comprises at least partially saturating a layer with hydrogen.

68. (Original) The method of claim 66, wherein releasing gas from the saturated portion of the one or more antifuses comprises heating the saturated portion.

69. (Original) A method of operating one or more programmable electrical connections in an integrated circuit, the method comprising:

at least partially saturating a portion of one or more of the programmable electrical connections with a gas;

releasing gas at a first rate from the saturated portions of one or more of the programmable electrical connections;

in response to releasing gas at the first rate from the saturated portions of the one or more of the programmable electrical connections, changing electrical status of the one or more of the programmable electrical connections; and

releasing gas at a second rate different from the first rate from the saturated portions of one or more of the antifuses.

70. (Cancelled)

71. (Previously Presented) A method of operating a programmable electrical connection in an integrated circuit, the method comprising:

applying a voltage to a resistor;

heating a hydride, oxide, nitride, or carbonate compound in response to applying the voltage to the resistor;

releasing or evolving a gas from the hydride, oxide, nitride, or carbonate compound in response to heating; and

moving a first conductive element relative a second conductive element in response to releasing or evolving the gas.

72-94. (Cancelled)

95. (New) The structure of claim 36, wherein each conductive member is electrically decoupled from the conductive layer.